by Harrison (*loc. cit.*), no doubt accounts for the green head reflections of the two hybrids herein described.

*Summary:*

Two hybrids between the European Wigeon and the Northern Pintail are described, one being of known parentage. While they are predominantly intermediate, the head and neck pattern shows a basic bimaculated state, and a post-ocular coppery-green stripe, which is considered to be reversionary towards the American Wigeon.

*Acknowledgments:*

We are very grateful to T. Tynan, of the Hancock Museum and R. W. Wagstaffe, of the City of Liverpool Museums for the loan of the wild-shot hybrid from the former museum.

For the loan of the Netherby hybrid, we are indebted to E. Blezard, of the Carlisle Museum, and also to his assistant, A. Allison, who relaxed the bird from its original mounted state into a study skin on our behalf.

We are also most grateful to Dr. Pamela Harrison for the photographs illustrating this paper.

Footnote:

Since writing this paper we have been presented with a further drake and two intersexes of this hybrid by Mrs V. M. Burnett, who reared all three from the same clutch three years ago. The drake shows the same basic features as the two specimens just described and is of known parentage, Pintail ♂ x Wigeon ♀.

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## A case of symmetrical albinism in a Skylark

*by* James M. Harrison

*Received 2nd June, 1965*

It is well known that albinism in birds can take one of several forms; that it may be minimal affecting only a few feathers; in fact it may amount from much to little, or be almost total except for a few normal feathers peculiar to the species affected. The unfeathered parts may also share in this pied state though the irides in such individuals are of normal colour, providing a ready distinction between albinism and the true and pathological albino.

As a rule such cases of the pied state exhibit an irregular distribution of the white areas, which may often be well described as a haphazard mosaic. However, cases are met with periodically in which whiteness has a curious and almost perfect symmetrical distribution.

Such a condition in a Skylark, *Alauda arvensis arvensis* Linnaeus is herein described, and as can be seen from the plate, the specimen exhibits a remarkable degree of symmetry.

The bird, in which the sex was unascertainable was obtained at Cley, Norfolk, on 1st February, 1965. The symmetrical nature of this individual is indeed remarkable; it is in fact almost numerically symmetrical, there being a difference in numbers of but one in the long remiges, *viz.*, seven white feathers in the right wing as against six in the left.

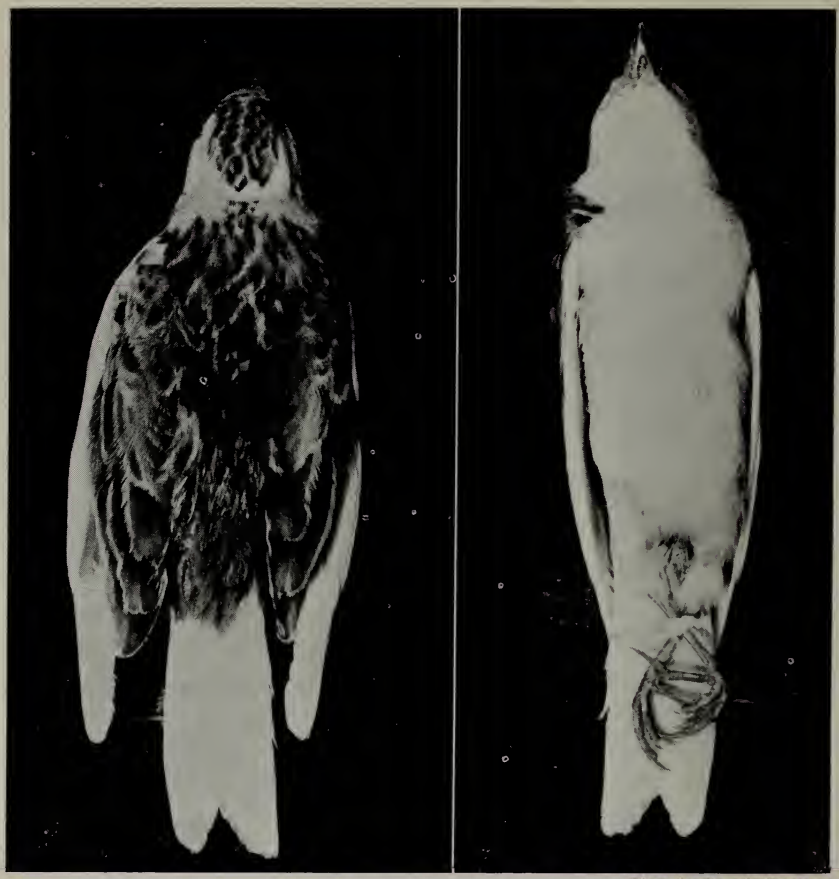

*Photo by Pamela Harrison*

Symetrical albinism in a Skylark

The interesting problems of symmetrical albinism in birds has been somewhat neglected, as indeed have most abnormal plumages, until in comparatively recent times, and even now no explanations of such symmetrical cases have been offered.

Naturally enough explanations of this condition must, in the present state of our knowledge, be speculative, though a number may be accounted for by a heterozygous state, *i.e.* they are genetic in origin and are therefore hereditary in nature, and occur irregularly in the species affected.

As has recently been shown by different authors, there are various causes for the albinistic state, amongst which may be mentioned trauma (Nero, 1954). Jeffery G. Harrison (1953) describes symmetrical albinism in the wings of four different species as follows, Goosander, *Mergus merganser merganser* Linnaeus, Golden Plover, *Charadrius apricarius* Linnaeus, Rook, *Corvus frugilegus frugilegus* Linnaeus and Curlew, *Numenius arquata arquata* (Linnaeus); the last case would appear to have been leucistic as the wings were described as isabelline.

In this paper it is postulated that there is some physiological defect in

which the precursors of pigment have failed or that the white of the albescent plumage is due to an absence of pigment within the feather, and that there may be some abnormality in the wings that is preventing the total or partial elaboration of the pigment, either directly from the blood stream or by means of oxidising agents, absorbed from the exterior to act on colourless pre-pigments.

Recently, Rollin (1964) has written at length on non-hereditary and hereditary abnormal plumages, invoking dietary deficiency as responsible for much of the albinism seen in wild birds. He has also (*loc. cit.*) given some differences by which to separate hereditary from non-hereditary albescence, claiming that in hereditary albescence the white feathers show the presence of some pigment. To establish this as a universal principle beyond dispute is going to require some very intensive study over an immense amount of material since albescence is specifically a very widespread condition.

It must yet await proof that symmetrical plumage anomalies can be occasioned by non-genetic factors *spontaneously*, and in the writer's view it is unlikely to be established. Of course the condition could possibly be induced by selective plucking, or by some other traumatising process.

We have very clear proof of genetic origin in at least two species. The first of these is of course the case of the chicks of the melanistic mutant pheasant, *Phasianus colchicus* var. "*tenebrosus*" Hachisuka (1927).

In this mutation the downy young exhibit symmetrical albinism of the extremities of the wings, a state which is continued in the first definitive primaries but not into adult life. These latter feathers show some pigmentation, supporting Rollin's hypothesis (*loc. cit.*). They also commonly exhibit albinism of the head and anterior part of the neck, and some show white eye stripes or white post-ocular stripes which do not always conform symmetrically. Also the abdomen is commonly albescent.

The second species (and no doubt there are others) to show symmetrical albinism of the wing-tips is the Little Ringed Plover, *Charadrius dubius curonicus* Gmelin, in which it is to be seen in the downy plumage only; *i.e.* as a normal character.

This condition of albinism, etc., of the wing-tips could conveniently be referred to as "acro-albinism"—leucism, etc., and can be seen in otherwise normally plumaged pheasants, *i.e.* non-melanistic *Phasianus colchicus* L. It is evident that there are some definite fixed and constant loci for albinism in birds, a fact not without significance. (Harrison, J. M., and Harrison, J. G., 1961).

While, of course, in the present state of our knowledge there can be no proof, it is in my opinion, a reasonable assumption that pattern, whether it be expressed in distributions of varying degrees and shades of pigmentation, or by the symmetrical distributions of contrasting areas of pigmentation and lack of pigmentation, is of genetic origin. This is, of course, the same thing as saying that symmetrical albinism is hereditary. Instances of patterns due to contrast in colour and lack of colour, in the normal morphology of different species readily occur to mind, and often represent important signal characters.

If the above assumption in these cases is correct, then it is clear that the white feathers in some cases of hereditary albinism do not always show some pigmentation as a criterion of their hereditary nature.

That albinism is of importance in evolution would seem very unlikely, at any rate to any extent, but that it may reflect reversion is, in the writer's opinion, highly probable. The whole question as to whether self-coloration, as white, black or one of the neutral tints preceded pattern in evolution, is a matter of interest. It is certain that by melanism occult patterning is often completely masked, just in exactly the same way that in some cases of depigmentation, *i.e.* leucism, a ghost pattern of the normal markings of the species can often be discerned. The frequency with which such instances occur over a very wide range of species both in vertebrate and invertebrate forms in Nature suggests that the whole phenomenon is to be regarded as basic and fundamental.

The hypothesis advanced by Harrison (1953., *loc. cit.*) of an interference with the normal course of the bio-chemical colour development within the feathers, is, of course, basically one of an alteration of fundamental physiology, and this could well depend upon nuclear genetics and support the hereditary nature of cases of symmetrical albinism.

Undoubtedly part of the fundamental aspect in the deposition of areas of pigmentation, or equally of lack of pigmentation has been the establishment during the long course of evolution of tracts receptive or resistant to the phenomenon of pigment deposition. Bonhôte (1905) called these tracts "poecilomeres". A recent instance of such a case where albinism has occurred in a tract reproducing a specific unit character, or signal character, peculiar to another species in the same genus as the species in which it has occurred, is recorded by Woodward (1961). In this instance the subject of the albinism is a male Blackbird, *Turdus merula merula* Linnaeus, in which the prominent white crescent on the front of the breast recalls the characteristic specific unit character of the Ring Ouzel, *Turdus torquatus* Linnaeus.

It is in just such cases that phylogenetic affinities are reflected, and once again stresses the essential difference between symmetrical albinism as a hereditary manifestation, as distinct from the haphazard albinism of traumatic or dietary or other non-genetic origin, which borders on the pathological.

The case recorded by Woodward (*loc. cit.*) also exhibited bilateral post-ocular white stripes; pale eye stripes are a character shown by various other members of the genus *Turdus*.

It is, of course, also possible that depigmentation induced by a controlled artificial diet, or a combination of an unnatural and a percentage of natural factors, as described by Rollin (1959) could possibly operate along tracts which are pigmented under normal living conditions and so give rise to a degree of symmetrical albinism, but it is however, one would think, most unlikely that every case of this condition would be due to such a dietary deficiency acting in just this manner.

From the evolutionary aspect it would seem therefore that such factors, when occasioning symmetrical albinism and other plumage phenomena in birds, and also mammals, act as markers by exposing occult specific unit characters in some cases where they are least expected, or in others giving rise to bold symmetrical patterns as in the present instance.

The case of Woodward's Blackbird (1961), quoted above, provides an instance of the exposure of susceptible specific unit character tracts by apparently extrinsic and non-genetic influences, and illustrates well the

fact, already noted, that melanism often masks potential patterns until these are disclosed by some disruptive biological process resulting in a striking discontinuous variation. (*c.f.* Harrison, J. M., 1953, Effects of Hybridisation).

Indeed just such an instance in a common mammal was recorded by David L. Harrison (1962). The case described occurred in a dog Fox *Vulpes vulpes crucigera* Bechstein which was killed on 13th December, 1961, near Brasted in Kent. This individual exhibited symmetrical albinism of both hind extremities, a similar white pattern of the hind feet occurs frequently in the *V. v. pusilla* Blyth with a range in N. W. India, Baluchistan and Persia to Iraq.

*Summary:*

A case of symmetrical albinism in a Skylark is described, and is discussed in the light of some recent research into albinism and allied problems in birds. It is suggested that symmetrical albinism, etc. of the wing-tips be referred to as acro-albinism, etc.

*Acknowledgments:*

My thanks are due to Dr. Jeffery G. Harrison who was instrumental in getting the specimen for me, and also for helpful comments on this note. I am also much indebted to Dr. Pamela Harrison for the photographs of the specimen.

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## The taxonomic affinites of the New Guinea genera *Paramythia* and *Oreocharis*

*by* C. J. O. Harrison and S. A. Parker

*Received 8th October, 1965*

SUMMARY

*Paramythia* and *Oreocharis* are currently regarded as aberrant genera of Dicaeidae. They have been compared only with the Sturnidae and Sylviidae. *Paramythia* resembles a bulbul, Pycnonotidae, and the two genera were therefore compared with those of the latter family and the Dicaeidae. Filoplumes, rictal bristles, tarsal scutes and nostril shape, were found to be shared characters which did not indicate relationship. The general appearance, plumage pattern and colour, bill shape, tongue, stomach, and